

# THE TAXONOMY OF SOME INDO-PACIFIC MOLLUSCA

Part 4. With descriptions of new taxa and remarks on

## *Nassarius coppingeri* (Smith)

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*Abstract.* New species of *Mitra* from Moreton Bay, Australia, *Vexillum* (*Pusia*) from Hawaiian Islands, and a *Muricopsis* from the Indian Ocean are described as new to science. *Murex noduliferus* Sowerby, and *M. euracanthus* A. Adams, are defined on the basis of their type-specimens. *Purpura ochrostoma* Blainville, usually assigned to the genus *Drupella* Thiele, and *Ergalatax contractus* (Reeve), are re-assigned to *Cronia* H. & A. Adams, on the basis of their radulae. *Phos textilis* A. Adams, is recorded from the Pacific, and the West American *Nassarius miser* (Dall), is synonymised with *N. coppingeri* (E. A. Smith).

Family MITRIDAE Swainson, 1831

Genus **Mitra** Lamarck, 1798

*Mitra* Lamarck, 1798, Tabl. Encycl. Méth. pl. 369 Type species by *T. Voluta mitra* Linnaeus, 1758 (Opinion 885 of ICZN). Recent, Indo-Pacific.

**Mitra hilli** sp. n

(Figs. 1-5)

Shell moderately large, 80.0-130 mm in length, fusiformly-elongate, width 26%-31% of length, moderately light in weight, teleoconch of 8-10 weakly convex whorls, protoconch with  $2\frac{1}{4}$  smooth, conoidal embryonic whorls, sutures tight and very narrowly ledged. Early whorls sculptured with 8-9 finely incised and minutely punctate spiral grooves; penultimate whorl with 9-12 spiral grooves and body whorl with 23-27 grooves, grooves finely axially striate on last two whorls through dense, overriding macrostriae. Aperture about equal in height to the spire, height 45%-51% of length, smooth within, outer lip convex in immature specimens but thick and straighter in mature individuals and forming a narrow calloused edge on the back of the outer lip, columella narrowly calloused and with 5-6 strong, oblique folds; siphonal notch distinct, siphonal canal longer than outer lip, slightly twisted and recurved towards body whorl, siphonal fasciole with 11-12 close-set, oblique cords. White in colour, ornamented with narrow, slightly wavy brown axial stripes, anterior two-thirds of spire whorls with a broad brown transverse band, body whorl with two bands, aperture porcellaneous-white. Periostracum light brown in colour and moderately translucent.

TYPE LOCALITY. 26 - 29 km north of Cape Moreton, Sth. Queensland, Australia, in 132 metres.

DISTRIBUTION. From Queensland, Australia to S.W. Taiwan, 112 - 155 m.



Figs. 1-5 *Mitra hilli* sp.n 1-4. Nth. of Cape Moreton, Qld., Australia, 121-132m. 1, 2. Holotype AIM No. TM-1344, 111.6 x 31.0 x 54.7 mm. 3. Last two whorls enlarged. 4. Paratype 109.6 x 31.8 x 56.0 mm. 5. Paratype from Taiwan, 155 m; 79.6 x 24.5 x 41.0 mm (coll. P. Clover).

*Holotype*. In the Auckland Institute and Museum, Auckland, No. TM-1344; length 111.6 mm, width 31.0 mm, height of aperture 54.7 mm (Figs. 1-3). The holotype is slightly immature and has a small predator hole on the dorsal side of the body whorl.

*Paratypes*. In coll. Bill Hill (127.4 x 33.5 x 63.9 and 111.0 x 31.0 x 53.0 mm); J. Tilton (103.0 x 29.5 x 50.1 mm); J. Mewburn (99.0 x 29.5 x 46.0 mm); J. Grady (87.4 x 25.5 x 43.0 mm); D. Vickers (100.7 x 28.9 x 53.2 mm); B. Davis (110.0 x 29.0 x 50.0 and 109.0 x 28.0 x 49.0 mm); R. Evans; and P. Clover (79.6 x 24.5 x 41.0 mm — specimen from Taiwan, Fig. 5).

*Mitra hilli* has been dredged in several Moreton Bay localities, ranging from 16 - 40 km north of Cape Moreton, at depth from 112 - 152 m. The solitary specimen from Taiwan came from a depth of 155 m. *M.hilli* is superficially similar to *M.triplicata* v. Martens, 1904, from the East Africa - Philippines region, but is twice as large (average size of *M.hilli* is 100 - 110 mm, of *M.triplicata* 45 - 55 mm), and occurs in considerably shallower waters than *M.triplicata* (*M.hilli* 112 - 155 m and *M.triplicata* 476 - 1362 m). The sculpture of *M.triplicata* is appreciably different and is usually coarser, with deeper, more coarsely pitted spiral grooves and 2-4 elevated cords at the body whorl suture; it is also less fusiform, the columellar callus is broader anteriorly, columellar folds number from 3-5, and the colour is uniformly tan to dark brown, and lacks the banded and striped pattern of *M.hilli*. The periostracum in *M.hilli* is light brown and translucent, while in *M.triplicata* it is thicker, more opaque and dark brown. Another somewhat similar species is *M.nivea* (Broderip, 1836), but it can be separated from *M.hilli* by its fenestrate sculpture on the very early spire whorls and the very numerous spiral striae which number from 35 - 70 on the body whorl; adult specimens of *M.nivea* are uniformly white to fawn in colour, and the sutures are occasionally minutely spotted with dark brown.

An unusual feature of *M.hilli* are the repaired breaks visible as scars on every specimen examined. Usually two break-scars are present on each shell, one on the spire whorls and one on the body whorl. The same scar is also present on the specimen from Taiwan.

The species has been named for Mr Bill Hill, Mooloolaba, Australia, who collected a series of specimens from Moreton Bay for study and description.

#### Family COSTELLARIIDAE Macdonald, 1860

- 1857. Turritidae Gray, Guide syst.distr.Moll.Brit.Mus. p.23 (for *Turris Montfort*, 1810 (*non* Roeding, 1798) — not available, Art.11e and 63 of ICZN).
- 1860. Costellariidae Macdonald, Trans.Linn.Soc.Lond. 23:81; 1861 Troschel, Arch.f.Naturg. 27(2):179.
- 1861. Turriculidae Carpenter, Ann.Repts.Smiths.Inst.Gen.App. p.178 (for *Turricula* Fabricius, 1823 (*non* Schumacher, 1817) — not available, Art.11e and 63 of ICZN).
- 1929. Vexillinae Thiele, Tandb.syst.Weich. 1:337.
- 1961. Pusinae Habe, Coll.Illust.shells Japan 2:69.

The family-group name Vexillidae Thiele, has appeared in a few malacological publications post 1961, and has been utilised as a separate family from the Mitridae for the generic units *Vexillum*, *Costellaria*, *Pusia*, *Thala* and

*Zierliana*. The family-group name Vexillidae, however, has been used only twice prior to 1961, and cannot therefore be considered to have been in "general current use", as defined by the 10 times usage criteria in Declaration 43 of the International Commission on Zoological Nomenclature (1970). Vexillidae Thiele, 1929, will have to be replaced by the chronologically prior Costellariidae Macdonald, 1860.

Genus **Vexillum** Roeding, 1798

Subgenus **Pusia** Swainson, 1840

*Pusia* Swainson, 1840, Treat.Malac. p.320. Type species by M *P.microzonis* (Lamarck) = *Mitra microzonias* Lamarck, 1811. Recent, Indo-Pacific.

**Vexillum(Pusia)salisburyi** sp. n.

(Figs. 6 - 9, 11)

Shell minute, up to 6.0 mm in length, elongate-ovate, width 42%-47% of length, moderately solid, teleoconch of  $4\frac{1}{2}$ - $4\frac{3}{4}$  weakly convex whorls which become roundly angulate at the presutural ramp, protoconch of  $1\frac{1}{2}$  smooth, glassy, typically pusiine embryonic whorls; sculptured with strong, roundly angulate axial ribs which number from 11-15 on the penultimate and from 6-12 on the body whorl, axial ribs usually becoming obsolete on the dorsal side of the body whorl particularly nearer the outer lip; interspaces of axial ribs with distinct, finely impressed spiral striae. Aperture about equal in height to the spire, height 47%-54% of length, narrow, interior lirate, edge of outer lip slightly constricted basally, parietal wall with callous-pad in adult specimens, columella with 4 oblique folds which decrease in size anteriorly and extend as prominent cords onto the siphonal fasciole; siphonal canal straight, siphonal notch distinct. Dark orange-brown, pinkish-brown or rose in colour, sutures of last two whorls frequently slightly paler rose-pink, aperture rose-brown.

TYPE LOCALITY. Pupukea beach, Oahu, Hawaiian Is, in beach-sand.

*Holotype*. Auckland Institute and Museum No.TM-1345; length 5.3 mm, width 2.3 mm, height of aperture 2.8 mm (Figs. 6, 7).

*Paratypes*. In the National Museum of Natural History, Smithsonian Institution, Washington; the Delaware Museum of Natural History, Greenville; the Academy of Natural Sciences, Philadelphia; the Bernice P. Bishop Museum, Honolulu; coll.G.Lindner, Hamburg; coll.H.Eker, Sanibel I, and the remaining 63 paratypes are in coll.R.Salisbury, Honolulu.

This minute species has been recently collected in large numbers in beach-sand in the Hawaiian Is. Most specimens examined, had a small part of the outer lip broken off, and in individuals with a complete outer lip, a distinct repair scar showed that a portion of the aperture had been replaced after injury. This weakness of the outer lip has been observed in *V.(P.)turben* (Reeve), *V.(P.)suavis* (Souverbie) and other small *Pusia* species, and is not an exclusive feature of *V.(P.)salisburyi*. This new species has been confused with *V.(P.)rubrum* (Broderip, 136), particularly the plain orange-buff colour-variant, but this species, although similar in size and sometimes colouring, differs in the prominently convex, swollen whorls. (Fig. 10).



Figs. 6-10. 6-9 *Vexillum (Pusia) salisburyi* sp.n.; Pupukea Beach, Oahu, Hawaiian Is. 6, 7. Holotype AIM No. TM-1345; 5.3 x 2.3 x 2.8 mm. 8, 9. Paratype 5.4 x 2.5 x 2.6 mm (coll. Salisbury). 10. *V. (P) rubrum* (Broderip); Fiji Is, 8.2 x 4.0 x 3.7 mm.

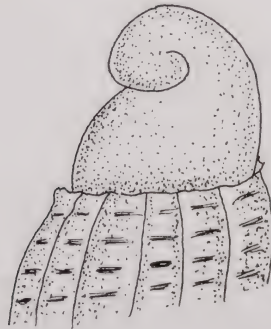


Fig. 11. *Vexillum (Pusia) salisburyi* sp.n. Protoconch.

The species has been named for Mr Richard Salisbury, Honolulu, a keen student of the family Mitridae, who has collected numerous specimens in the Hawaiian Islands, and recognised the distinction from other, related species.

Family MURICIDAE Rafinesque, 1815

Genus **Muricopsis** Bucquoy, Dautzenberg & Dollfus, 1882

*Muricopsis* Bucquoy, Dautzenberg & Dollfus, 1882, Moll.Mar.Roussillon, 1:16,19. Type species by OD *Murex blainvillei* Payraudeau, 1826. Recent, Mediterranean.  
1852. *Muricidea* Moerch, Cat.Conchyl.Yoldi, 1:95 (non Swainson, 1840).  
1915. *Murexsul Iredale*, Trans.N.Z.Inst. 47:471. Type species by OD *Murex octogonus* Quoy & Gaimard, 1833. Recent, Australia and New Zealand.

**Muricopsis orri** sp. n.

(Figs. 12-20)

Shell moderately small, 27.0 mm in length, solid, spire pointed, sutures adpressed and undulate, teleconch of  $7-7\frac{1}{4}$  mature, convex whorls which are subangulate on presutural ramp, protoconch of  $1\frac{1}{2}$  smooth embryonic whorls. Varices coarse and thick, numbering from 5-7 on the body whorl, spire whorls with a single spine extending from the varix at the presutural ramp, body whorl with 4 rows of main spines, 2 central spines slightly shorter than adjacent top and bottom spines; first row of spines slightly curved upward, fourth row pointing downward, spines connected by 4 main spiral chords to neighbouring varices, remainder of shell-surface sculptured with numerous, fine and slightly gemmate or scaly spiral striae. Spines emanating from sutures in a broad growth, spine-surface at this point sculptured by oblique axial rows of prickly scales. Aperture small, oviform, apertural rim well elevated above shell-surface, outer lip with 6-8 prominent denticles which continue as lirae into the aperture, columella prominently calloused and with 2-4 small denticles anteriorly; outer lip usually with 4 main spines and occasionally smaller intermediate spinelets, right side of siphonal canal without spines, siphonal fasciole with 2 longer and 1 short spine, siphonal canal moderately short, open, and recurved towards the dorsum. Usually brown in colour, sometimes yellowish-brown, edges of varices and sutural scales whitish, aperture white or pale violet within. Operculum orange-brown, moderately thin and with a terminal nucleus.

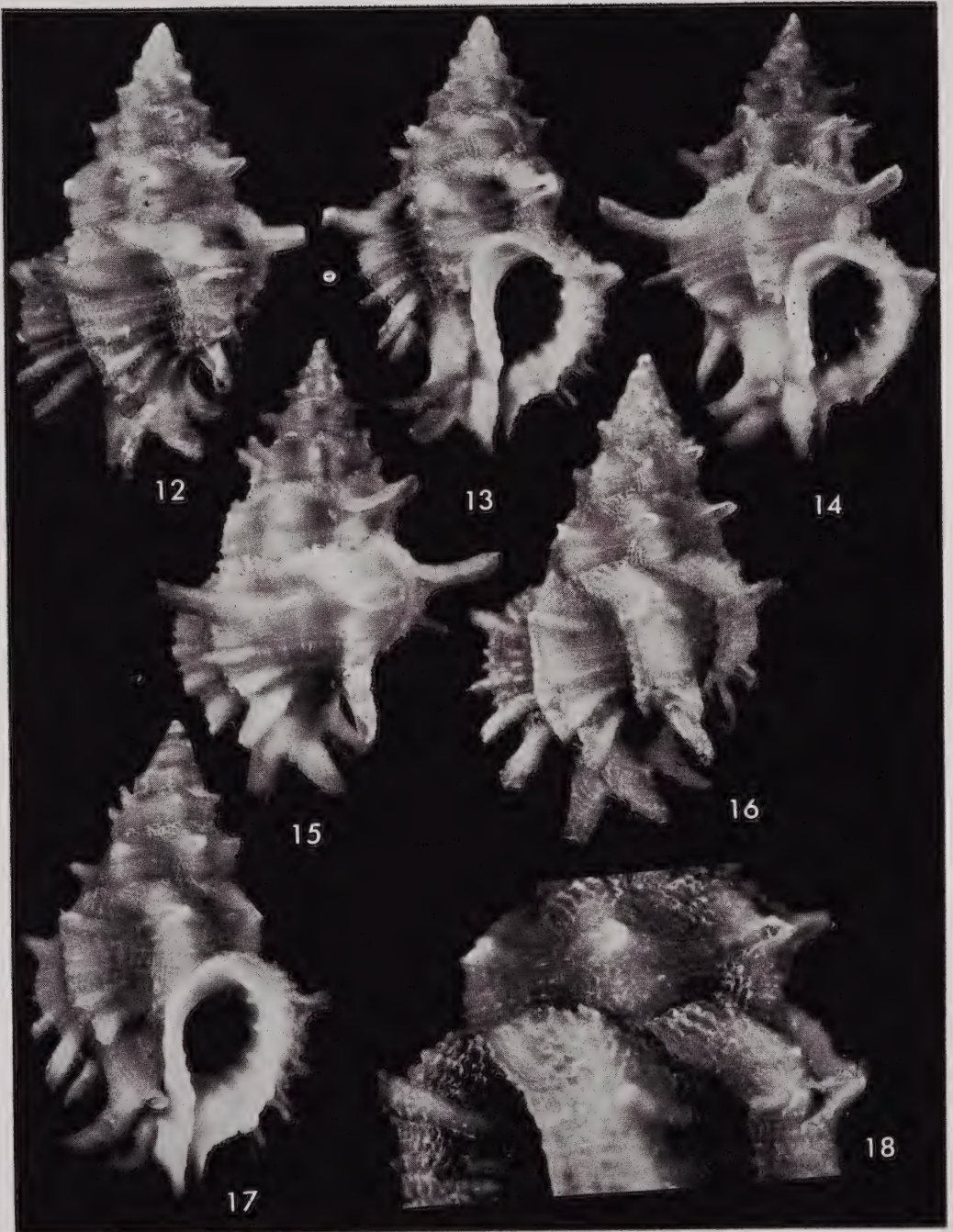
TYPE LOCALITY. South of the Andaman Islands, Indian Ocean, in 55 metres.

DISTRIBUTION. From the Andaman Is to the west coast of Thailand.

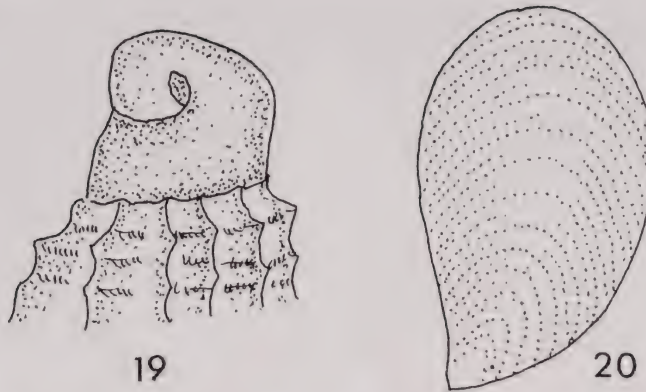
*Holotype*. In the Auckland Institute and Museum, Auckland, No. TM-1346; length 27.1 mm, width 18.6 mm (spines excluded) (Figs. 12, 13).

*Paratypes*. Paratypes No.'s 1-3, dimensions 32.5 x 20.0 mm, 29.1 x 22.0 mm, and 29.0 x 20.2 mm, (Figs. 14,15) are in coll.E. Wright, Sanibel Island; paratype No. 4, 32 x 22.8 mm, from Krabe, S.W. coast of Thailand, is in the author's collection (Figs. 16-18).

This new species has been labelled in collections as *Muricopsis infans* (E.A. Smith, 1884). Smith's holotype of *Murex (Ocenebra) infans*, Brit.Mus. (Nat.Hist.) No. 1882.12.6.133, is a minute, 8.0 mm long species from the Amirantes Is, (E. A. Smith, 1884) which bears little resemblance to *Muricopsis orri*, and could possibly belong to *Cronia* rather than *Muricopsis* (Fig. 21). *M.orri* resembles in some



Figs. 12-18. *Muricopsis orri* sp.n. 12-15. Sth. of the Andaman Is, 55 m. 12, 13, Holotype AIM No. TM-1346, 27.1 x 18.6 mm. 14, 15. Paratype 29.0 x 20.2 mm (coll. E. Wright). 16-18. Krabe, S.W. coast of Thailand. 16, 17. Paratype 32.2 x 22.8 mm. 18. Last two whorls enlarged.



Figs. 19, 20. *Muricopsis orri* sp.n. 19. Protoconch. 20. Operculum.

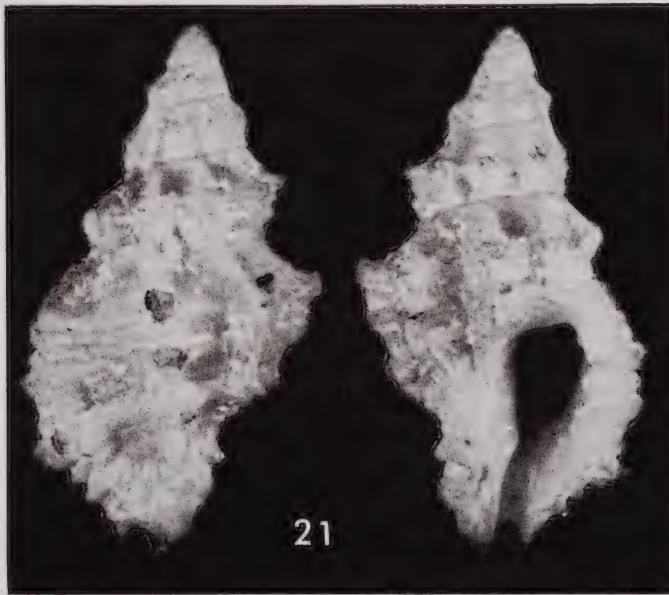


Fig. 21. *Murex (Ocenebra) infans* E. A. Smith, Amirantes Is. Holotype BMNH No. 1882.12.6.13., 8.0 x 4.3 mm.

ways "*Muricopsis cuspidatus* Sowerby" of Ponder (1972), but in *M.orri* the spire whorls are more angulate, the varices thick and prominent, the spines become erect on the presutural ramp and the right side of the siphonal canal always lacks spines. Some doubt exists that Ponder's "*Muricopsis cuspidatus*" is conspecific or even congeneric with Sowerby's species. The type-specimen of *Murex cuspidatus* Sowerby, 1879, from Japan can no longer be traced in the type-collection of the British Museum (Nat. Hist.), London, but the type-figure shows a species with 8 rows of equal-sized spines and not 4 like in the Australian species, the columella is round and concave, and the siphonal fasciole has a bulging fasciolar flat pad with 5 short spines on the edge. *M.cuspidatus* Sowerby, is probably not even a *Muricopsis* but bears a close resemblance to species of *Chicoreus* or *Hexaplex*, and has been assigned to the latter group by Vokes (1971).



The species has been named for Mr John Orr, currently of Hong Kong, who has collected the species in Thailand several years ago.

**Muricopsis noduliferus** (Sowerby, 1841)

(Figs. 22-26)

1841. *Murex noduliferus* Sowerby, Conch.Illust.*Murex*, pl.194,fig.94; 1841 Sowerby, Proc. Zool.Soc.Lond. Pt.8:147.  
 1849. *Murex*(*Trophon*)*fruticosus* Gould, Proc.Boston Soc.Nat.Hist. 3:143; 1852 Gould, U.S. Exped. 12:236,pl.17,figs.287,287a (immature specimen).  
 1880. *Murex*(*Phyllonotus*)*noduliferus* Sowerby, Tryon, Man. Conch. 2:111, pl.30, figs.282,288.  
 1963. *Drupa*(*Morula*)*nodulifera* Sowerby, Shikama, Select.shells world col. 1:pl.59,fig.1.  
 1967. *Poirieria nodulifera* (Sowerby), Cernohorsky, Veliger, 10(2):125, pl.15, fig.17; 1967 Cernohorsky, Mar.shells Pacific 1:128, pl.27, fig.166.  
 1971. *Muricopsis noduliferus* (Sowerby), Vokes, Bull.Americ.Paleont. 61(268):75.

TYPE LOCALITIES. Masbate I, Philippine Is (*M.noduliferus*); Sydney, Australia, = error? (*M.fruticosus*).

The re-description which follows, has been based on Sowerby's type-specimens and live-collected examples from the Fiji and Tonga Is.

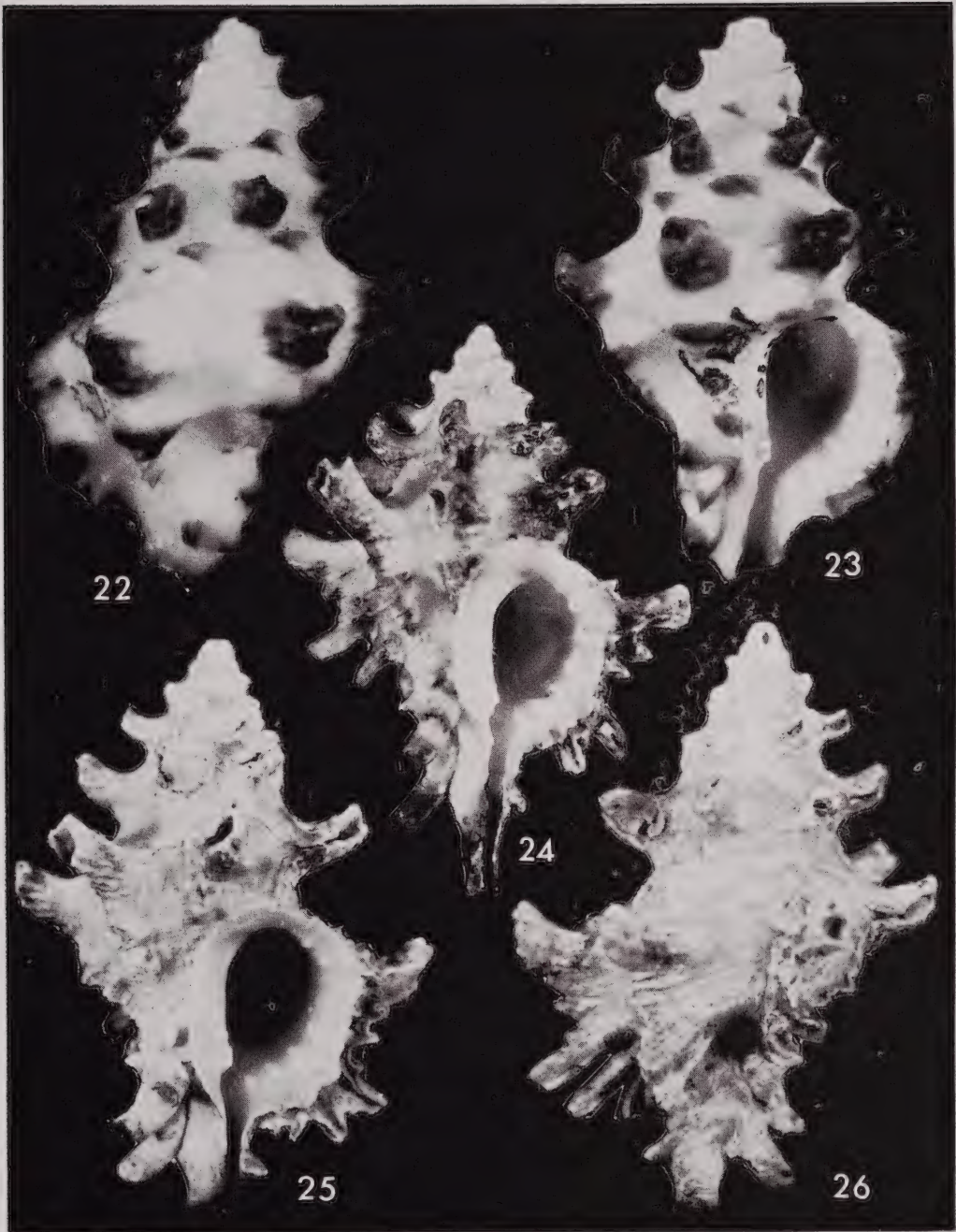
Shell up to 32 mm in length, light in weight, spire conical, sutures fully adpressed and prominently wavy, varices numbering from 6-7 on the body whorl and from 6-8 on the penultimate whorl; sutures and presutural ramp conspicuously smooth, spire whorls sculptured with 1 row of centrally placed, extended, and occasionally curved open spines, centre of body whorl with 3 spiral rows of spines which decrease in size anteriorly, third row of spines adjacent to second row, and a fourth row of spines occasionally present; spiral sculpture almost absent except for very obsolete spiral cords between the main fronds on the body whorl. Siphonal fasciole with 1 row of small spines and 3 curved spines anteriorly, siphonal canal produced, recurved and slightly open, and with a small spine situated on the right side of the siphonal canal; aperture small, oviform, and with a prominent laminated callus, outer lip varix with three main spines and 1-2 intermediate spinelets, edge of outer lip angulate and with more than a dozen small spinose denticles, interior of aperture with 5-7 prominent denticles, columellar pad elevated above body whorl, base of columella with 0-4 (usually 2-3) small denticles. Uniformly white or cream in colour, end of spines occasionally brown, aperture white or creamy-yellow.

Sowerby's two syntypes, one of them immature, are in the Brit.Mus.(Nat. Hist.) London, No. 1842.5.10 (1618-1619) (Figs.22,23), dimensions of illustrated syntype length 20.2 mm, width 12.8 mm. Both specimens are very worn and faded with most of the spines and siphonal canal worn down. Both specimens were utilised for the drawing of the type-figure, which shows composite features of the aperture from the adult syntype and formation of the spines from the immature individual. Live-taken specimens always have well-extended spines, and only beach-rolled specimens show swollen, worn down knobs.

Genus **Spinidrupa** Habe and Kosuge, 1966

*Spinidrupa* Habe & Kosuge, 1966, Venus:Jap.J.Malac. 24(4):315,330. Type species by OD *Murex eurantha* A.Adams = *M.euracanthus* A.Adams, 1853. Recent, Indo-Pacific.

1966. *Spinidrupa* Habe & Kosuge, Shells world col. 2:54 (*nomen nudum*).



Figs. 22-26. *Muricopsis noduliferus* (Sowerby). 22, 23. Syntype BMNH No. 1842.5.10., 20.2 mm; Masbate I, Philippines. 24. Specimen from Viti Levu Bay, Viti Levu, Fiji Is; 24.0 mm. 25, 26. Specimen from Ogea I, Fiji Is, 27.0 mm.

**Spinidrupa euracantha** (A. Adams, 1853)

(Figs. 27-30)

1845. *Murex noduliferus* "Sowerby", Reeve, Conch. Iconica 3:pl.31,fig.150 (*non* Sowerby, 1841).
1853. *Murex euracanthus* A. Adams, Proc. Zool. Soc. Lond. Pt. 19:268 (*nom. subst. pro M. noduliferus* Reeve, 1845).
1880. *Murex (Phyllonotus) euracanthus* A. Ad., Tryon, Man. Conch. 2:111, pl. 30, fig. 287.
1963. *Drupa (Morula) ambusta* (Dall), Shikama, Select. shells world col. 1:pl. 59, fig. 2 (*non Morula ambusta* Dall, 1923).
1966. *Spindidrupa eurantha (sic)* (A. Adams), Habe & Kosuge, Shells world col. 2:54, pl. 20, fig. 4.
1972. *Muricopsis (Spinidrupa) eurantha (sic)*, A. Adams, Ponder, J. Malac. Soc. Australia 2(3): 243.

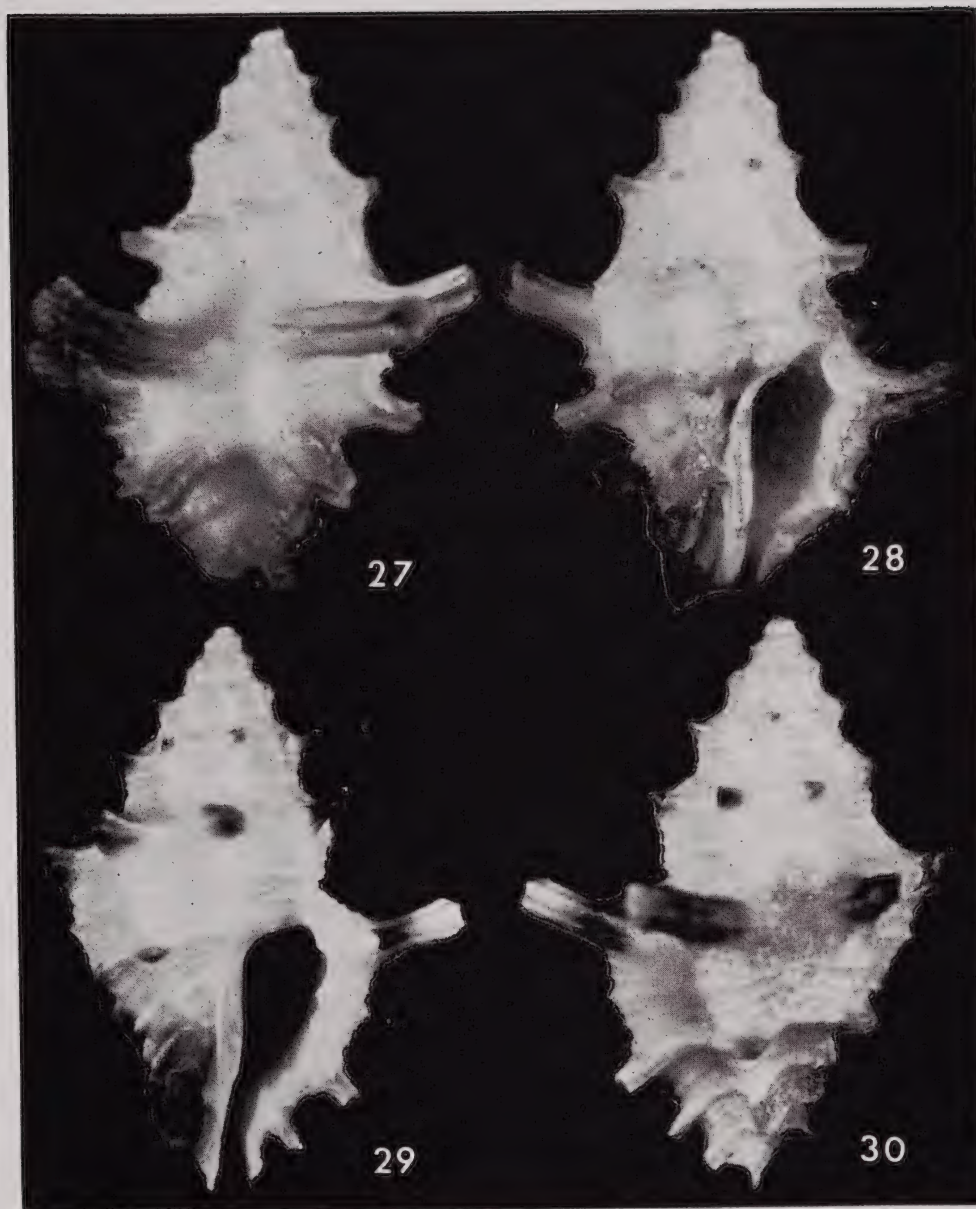
TYPE LOCALITY. None.

Tryon (1880) and Ponder (1972) suggested that *E. euracantha* could prove to be identical with *Muricopsis noduliferus* (Sowerby). The 4 syntypes of *Murex euracanthus* A. Adams (which are also the types of *M. noduliferus* Reeve) are in the Brit. Mus. (Nat. Hist.), London, No. 19763. One syntype is a small juvenile, two specimens, including the long-spined individual illustrated by Reeve (1845) are worn, and only one specimen shows a moderately crisp sculpture. These syntypes are quite different to *Muricopsis noduliferus* (Sowerby), and differ primarily in the prominent spiral sculpture. The anterior half of the spire whorls below the periphery of the spines, has 4-5 spiral cords, the presutural ramp is distinctly axially fimbriate, and the body whorl has 2-3 main spiral cords and 3-4 smaller, intermediate threads; spire whorls have a single row of spines and the body whorl has 4 rows, with the fourth row terminating at the siphonal fasciole. The development of the spines is extremely variable, and in the specimen illustrated by Reeve (*op. cit.*), the dorsal side of the body whorl carries 2 rows of excessively long spines (Figs. 27, 28).

The apertural features are more similar to *Cronia*: the columella descends almost vertically and has 2 weak basal folds, and the outer lip 5-6 denticles. The syntypes are worn, white in colour, with the spines and fasciolar region brown, and in one syntype the base of the columella and siphonal canal are stained with violet. The radula of *Spinidrupa euracantha* is unknown, and the species may prove to be closer to *Cronia* than to *Muricopsis*. *S. euracantha* is closely similar to the very variable *Morula spinosa* (H. & A. Adams, 1853) [= *Ricinula chrysostoma* Reeve, 1846 — *non* Deshayes, 1844, = *Murex iostomus* A. Adams, 1853 — *non* Sowerby, 1834, = *Sistrum andrewsi* E. A. Smith, 1909, = *Morula ambusta* Dall, 1923], and short-spined individuals of *S. euracantha* also resemble *Morula biconica* (Blainville, 1832). *Spinidrupa euracantha* has been illustrated under the name "*Drupa (Morula) ambusta* Dall" (which is actually a substitute name for *Ricinula chrysostoma* Reeve, 1846) by Shikama (1963). The original tablet on which the type-specimens of *Murex euracanthus* have been mounted bears a remark "= *iostoma* var."

Genus **Cronia** H. & A. Adams, 1853

*Cronia* H. & A. Adams, 1853, Gen. Rec. Moll. 1:128. Type species by *M. Purpura amygdala* Kiener, 1835. Recent, Indo-Pacific.



Figs. 27-30. *Spinidrupa euracantha* (A. Adams). Syntype of *Murex noduliferus* Reeve, and *M.euracanthus* A. Adams, BMNH No. 19763. 27, 28. Syntype, 22.6 mm 29,30. Syntype, 18.1 mm.

***Cronia ochrostoma* (Blainville, 1832)**

(Figs. 31-36)

- 1832. *Purpura ochrostoma* Blainville, *Nouv. Ann. Mus. Hist. Nat.* 1:205; 1835 Kiener, *Spec. gen. icon. coq. viv.* 8:44, pl. 10, fig. 29.
- 1833. *Purpura nassoides* var. Quoy & Gaimard, *Voy. L'Astrolabe, Zool.* 2:564, pl. 38, figs. 10, 11 only (non *P. nassoidea* Blainville, 1832).
- 1846. *Ricinula ochrostoma* Blainville, Reeve, *Conch. Iconica* 3:pl. 4, fig. 31.

1846. *Ricinula cavernosa* Reeve, Conch. Iconica 3:pl.4, figs. 38a, b.  
 1880. *Ricinula (Sistrum) ochrostoma (pars)* Blainville, Tryon, Man. Conch. 2:187, pl. 57, fig. 230, and pl. 58, fig. 231 only.  
 1967. *Drupa (Drupella) ochrostoma* (Blainville), Maes-Orr, Proc. Acad. Nat. Sci. Philadelphia 119(4):130, pl. 11, fig. 1.

TYPE LOCALITIES. Tonga Is = error; should be New Ireland (*P. ochrostoma*); New Ireland (*P. nassoides*); Philippine Is (*R. cavernosa*).

DISTRIBUTION. Tropical Indo-Pacific.

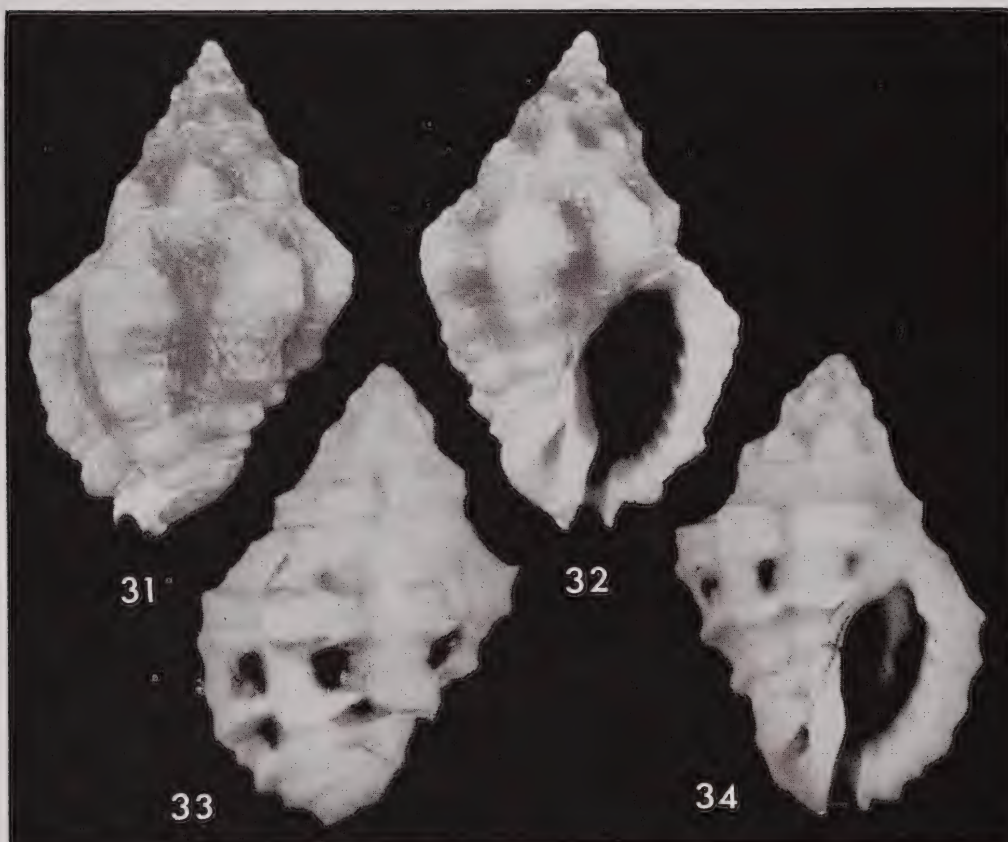
*Purpura ochrostoma* Blainville, is usually assigned to the genus *Drupella* Thiele, 1925, a genus characterised by an unusual radula in which the lateral teeth are long, slender, and "crow-bar"-shaped (Cernohorsky, 1969). Recent examination of the radula of *C. ochrostoma* from Indonesia, shows that the species has a radula dentition of the *Cronia* group, which differs from that of *Morula* by the absence of small lateral denticles (Figs. 35, 36). *C. ochrostoma* is characterised by its squat, biconic shape, adpressed and prominently wavy sutures which lack nodules, 6 swollen and angulate axial ribs on the body whorl and 4 spiral rows of nodulose body whorl cords, and an orange aperture which in many specimens shows a dark brown spot on the outer lip wall. In the form *cavernosa* Reeve, syntypes in the Brit. Mus. (Nat. Hist), London, No. 1968469 (Figs. 33, 34), the spiral cords are more prominent and the body whorl has a central row of dark brown spots. The specimen illustrated by Cernohorsky (*op. cit.*) as "*Drupella ochrostoma*" is the orange-mouthed male colour-form of the highly variable *Drupella cornus* (Roeding, 1798). Radwin & D'Attilio (1972) recently proposed the new genus *Evokesia* for the West American species *Sistrum* (?*ochrostoma* var.) *rufonotatum* Carpenter, 1864. The tropical Pacific *C. ochrostoma* is very similar in shell characters to the West American *rufonotatum*, their radulas are basically the same, and neither differs in radula pattern to species of *Cronia* H. & A. Adams.

#### Subgenus *Ergalatax* Iredale, 1931

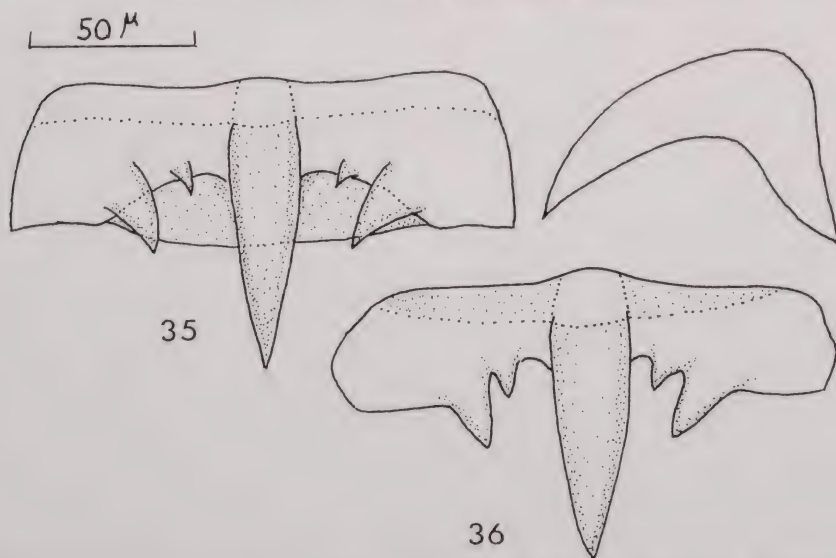
*Ergalatax* Iredale, 1931, Rec. Aust. Mus. 18(4):231, 233. Type species by OD *E. recurrens* Iredale, 1931 = *Buccinum contractum* Reeve, 1846. Recent, Indo-Pacific.

#### ***Cronia (Ergalatax) contracta* (Reeve, 1846)** (Figs. 37-41)

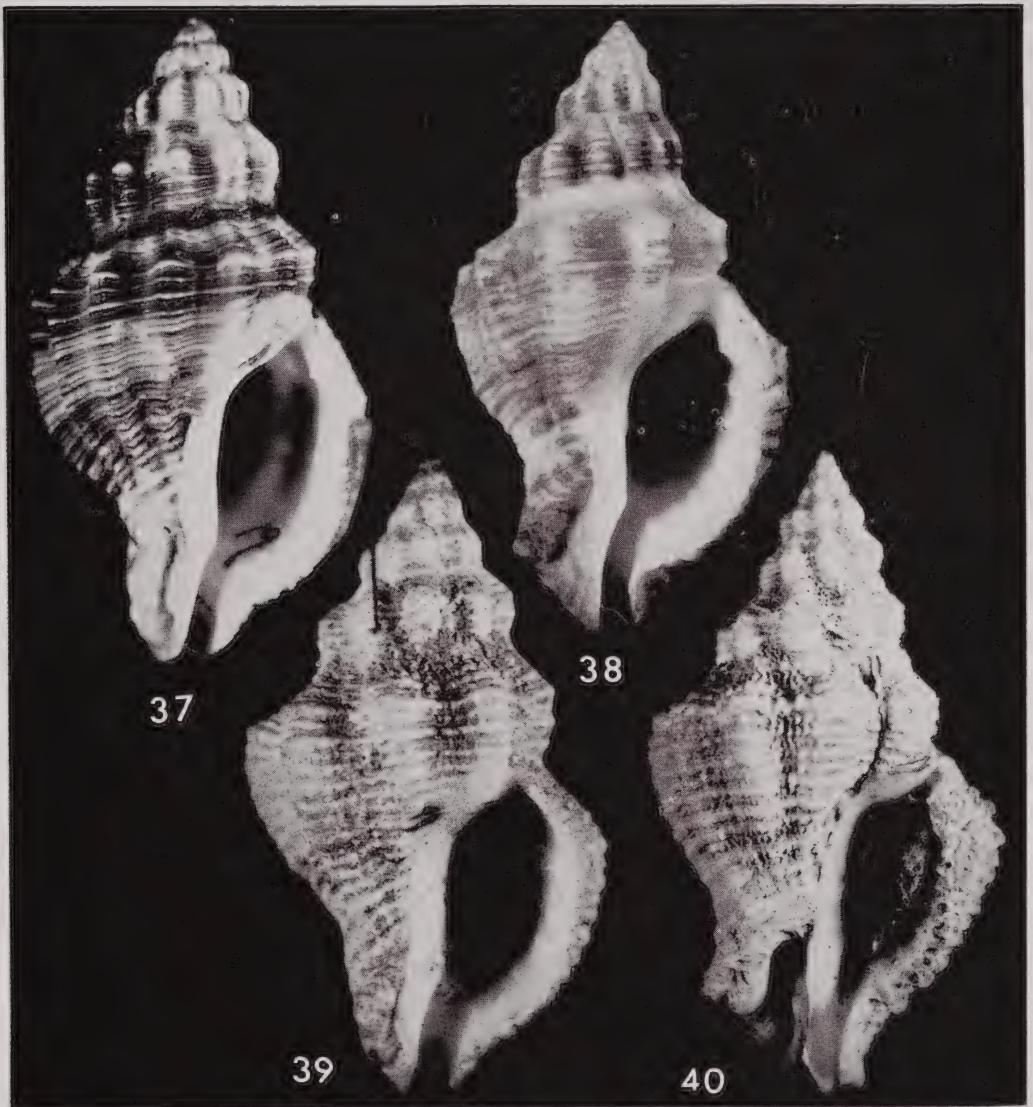
1846. *Buccinum contractum* Reeve, Conch. Iconica 3:pl. 8, fig. 53.  
 1846. *Buccinum funiculatum* Reeve, Conch. Iconica 3:pl. 8, fig. 61.  
 1860. *Murex calcarius* Dunker, Malak. Blaetter 6:230; 1861 Dunker, Moll. Japonica p. 5, pl. 1, fig. 2.  
 1879. *Urosalpinx innotabilis* E. A. Smith, Proc. Zool. Soc. Lond. p. 201, pl. 20, fig. 32.  
 1884. *Urosalpinx contracta* (Reeve), E. A. Smith, Rept. Zool. coll. H. M. S. "Alert", p. 47 (placed *U. innotabilis* in synonymy); 1901 Melville & Standen, Proc. Zool. Soc. Lond. 2:398.  
 1893. *Coralliophila latiaxidea* Sowerby, Proc. Malac. Soc. Lond. 1:42, pl. 4, fig. 6.  
 1909. *Trophon contractus* Reeve, Hedley, Aust. Assoc. Adv. Sci., sect. D, p. 368.  
 1918. *Xymene contracta* Reeve, Hedley, J. Proc. R. Soc. N. S. W. 51:M92.  
 1931. *Ergalatax recurrens* Iredale, Rec. Austral. Mus. 18(4):231.  
 1957. *Tritonalia contracta* Reeve, Kaicher, Indo-Pacif. Sea shells, Muricea-Buccinea, pl. 5, fig. 6.



Figs. 31-34. *Cronia ochrostoma* (Blainville). 31, 32. Specimen from Rabaul, New Britain, 15.9 x 10.3 mm. 33, 34. Syntype of *Ricinula cavernosa* Reeve, BMNH No. 1968469, 15.0 x 10.4 mm; Burias I, Philippines.



Figs. 35, 36. *Cronia ochrostoma* (Blainville). 35. Half-row of radula (dorsal view). 36. Rhachidian tooth (ventral view).



Figs. 37-40. *Cronia (Ergalatax) contracta* (Reeve). 37. Syntype BMNH, 30.0 x 15.8 mm; Samar I, Philippines. 38. Specimen from Baïé du Citron, New Caledonia; 26.0 x 15.0 mm. 39. Syntype of *Urosalpinx innotabilis* E. A. Smith, BMNH No. 1878.11.18.50. 19.4 x 10.8 mm; Nth. of Kiushiu, Japan. 40. Holotype of *Coralliophila latiaxidea* Sowerby, BMNH, 25.8 x 12.7 mm; Mauritius.

1959. *Urosalpinx heptagonalis* (Reeve, Barnard, Ann. St. Afric. Mus. 45:231, fig. 40j (radula) [non *Ricinula heptagonalis* Reeve, 1846].  
 1964. *Ergalatax constrictus* (sic) (Reeve), Habe, Shells west. Pacif. col. 2:84, pl. 27, fig. 11.  
 1964. *Ergalatax constrictus calcareus* (sic) (Dunker) Habe, *ibid.* 2:84, pl. 27, fig. 12.  
 1972. *Ergalatax contracta* (Reeve), Radwin, Veliger, 15(1):36, fig. 4 (shell), fig. 5 (radula).

TYPE LOCALITIES. Samar I, Philippine Is (*B. contractum*); None (*B. funiculatum*); Japan (*M. calcarius*); Nth. of Kiushiu, Japan, 33°56'N & 130°27'E, 30 fathoms (55 m) (*U. innotabilis*); Mauritius (*C. latiaxidea*); Sydney Harbour, Australia (*E. recurrens*).

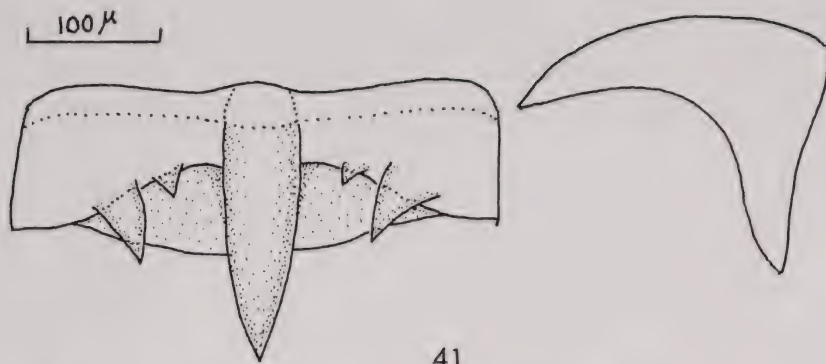


Fig. 41. *Cronia (Ergalatax) contracta* (Reeve). Half-row of radula.

*C.(E.)contracta* is usually assigned to the genus *Ergalatax* Iredale, however, the radula examined from a New Caledonian specimen (Fig. 41), agrees in all essential features with the radula of *Cronia* H. & A. Adams. The species is extremely variable in shape, sculpture, length of siphonal canal and colour, a fact recognised already by E. A. Smith (1884), when he synonymised his *Urosalpinx innotabilis* with *contracta* Reeve. *C.(E.)contracta* closely resembles *C.margariticola* (Broderip), and both species are frequently found mislabelled in Museum collections.

*Murex calcarius* Dunker, 1860, described from Japan, is the stumpy form of *C.(E.)contracta*. The syntypes of *Urosalpinx innotabilis* E. A. Smith, length of illustrated syntype 19.4 mm, width 10.8 mm, are in the Brit.Mus. (Nat.Hist.), London, No.1878.11.18.50. (Fig. 39), and these are also the broad form of *C.(E.)contracta*. The holotype of *Coralliophila latiaxidea* Sowerby, is in the same Institution, and measures 25.8 x 12.7 mm; the fasciolar callus is more exaggerated than in normal specimens (Fig. 40). Three syntypes of *Buccinum contractum* Reeve, are also in the Brit.Mus. (Nat.Hist.), dimension of illustrated syntype 30.0 x 15.8 mm (Fig. 37).

The usual colouring of *C.(E.)contracta* is cream, with narrow or broad brown transverse bands; some specimens, however, are uniformly cream, fawn, or pale brown. All specimens are spirally corded, but some individuals have more prominently imbricated spiral cords than others.

#### Family BUCCINIDAE Rafinesque, 1815

##### Genus **Phos** Montfort, 1810

##### Subgenus **Strongylocera** Moerch, 1852

*Strongylocera* Moerch, 1852, Cat.Conchyl.Yoldi 1:80. Type species by SD (Cossman, 1901) *Baccinum cancellatum* Quoy & Gaimard, 1833 (*non* Gravenhorst, 1807) = *B.textum* Gmelin, 1791. Recent, Indo-Pacific.

##### **Phos(Strongylocera)textilis** (A. Adams, 1851) (Fig. 42)

1851. *Phos textile* A.Adams, Proc.Zool.Soc.Lond. Pt.18:154; 1859 Sowerby, Thes.Conchylorum 3:93, pl.222, fig.s.48,49.

1881. *Phos senticosus (pars)* Linnaeus, Tryon, Man.Conch. 3:216, pl.83, figs.492,493 only (*non Murex senticosus* Linnaeus, 1758).





Fig. 42. *Phos (Strongylocera) textilis* A. Adams. Nordup, East New Britain, 24 m; 10.1 x 5.0 x 5.0 mm (dorsal view) and 11.0 x 6.1 x 5.7 mm (ventral view).

TYPE LOCALITY. Dumaguete, Philippine Is.

Shell about 11.0 mm in length, teleconch of 4 mature whorls which are angulate at the presutural ramp, protoconch of 4 smooth, creamy-white embryonic whorls, first 1-2 embryonic whorls nipple-like, last embryonic whorl large and swollen; sculptured with angulate axial ribs which become nodose on the presutural ramp and number from 10-11 on the penultimate and from 8-15 on the body whorl. Numerous spiral threads encircle the shell and number from 15-17 on the penultimate and from 22-30 on the body whorl, 3 spiral cords elevated and prominent on anterior half of body whorl. Outer lip variced, interior of aperture lirate, parietal wall minutely wrinkled, anterior of columella with 2 folds, siphonal fasciole calloused and corded. White in colour, finely peppered with small brown spots, axial ribs finely lined with brown, anterior third of body whorl sometimes with a faint, interrupted brown band, aperture white.

The species has been originally inadequately described, and no recent specimens have been reported or illustrated. The species has been collected in deep water off Nordup, New Britain, by Mr B. Parkinson.

Family NASSARIIDAE Iredale, 1916

(The validity of the family name is currently under consideration by the I.C.Z.N.)

Genus *Nassarius* Duméril, 1806

*Nassarius* Duméril, 1806, Zool. Analyt. p.166. Type species by SM (Froriep, 1806) *Buccinum arcularia* L. = *B. arcularia* Linnaeus, 1758. Recent, Indo-Pacific.

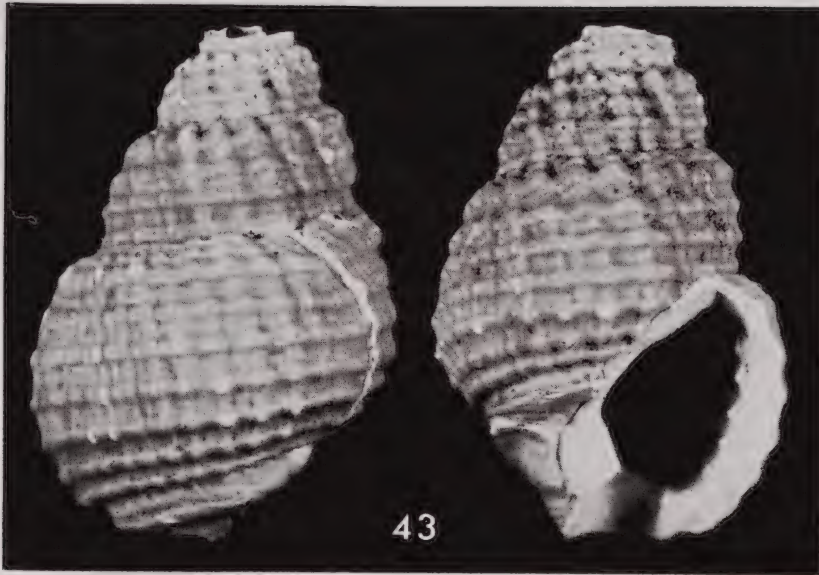


Fig. 43. *Nassarius coppingeri* (E. A. Smith). Gulf of Panama, 520 m; 16.8 + 12.0 x 10.6 mm (protoconch missing).

***Nassarius coppingeri*** (E.A.Smith, 1881)

(Fig.43)

1881. *Nassa*(*Tritia*) *coppingeri* E.A. Smith, Proc.Zool.Soc.Lond.p.30,pl.4,fig.7; 1882 Tryon, Man.Conch. 4:56,pl.18,fig.372; ? 1951 Carcelles & Williamson, Rev.Inst.Nac.Inv.Cienc. Nat. 2(5):299.
1908. *Alectrion*(*Hima*)*miser* Dall,Bull.Mus.Comp.Zool.Harvard 43(6):307,pl.4,fig.1.
1917. *Alectrion miser* Dall, Proc.U.S.Nat.Mus. 51:576.
1958. *Nassarius miser* (Dall), Keen,Seashells trop.west America ed.1:410; 1971 Keen, *ibid.*, ed.2:607,fig.1306; 1974 Abbott, American Seashells ed.2:225.
1975. *Nassarius coppingeri* (E.A.Smith),Cernohorsky,Rec.Auckland Inst.Mus. 12:143,fig.50 (figd. holotype).

TYPE LOCALITIES. Tom Bay, near Madre de Dios Archipelago, Southern Chile, 1-30 fathoms (2-55 m) (*N.coppingeri*); St.3355, Gulf of Panama, 7°12'20"N & 80°55'W, in 182 fathoms (333 m), at 46° to 56.2°F (7.8° — 13.5°C), mud (*A.miser*).

DISTRIBUTION. From Baja California to Panama and Southern Chile, from 55-590 m.

Cernohorsky (1975) illustrated the holotype of the Chilean *N.coppingeri* (E. A. Smith), and remarked on the close similarity between this species and the Panamanian *N.miser* (Dall). Recent examinations of a series of specimens of *N.miser* from the Gulf of Panama, 7°28'N and 79°36'W, in 520 m, green mud (Mortensen Exped., Zool. Mus. Copenhagen), leave no doubt that the two species are indeed conspecific. The rope-like spiral cords and very broad siphonal canal are characteristic of the species. The colour varies from straw-yellow to brown and the protoconch is usually eroded. The similarity of *N.coppingeri* to the Austral-Neozelanic deep water *N.(Cryptonassarius)ephamillus* (Watson, 1882) is rather striking, except that *N.ephamillus* lacks the well-formed denticles on the outer lip.

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